

Remarks:

In the Office Action mailed April 11, 2003, the Examiner raises the following points:

1. Clarity of claims 1-3 (35 USC §112)
2. Non-obviousness of claims 1-4 and 10-19 (35 USC §103)
3. Allowability of claims 5-9.

Re point 1: Clarity of claims 1-3.

Amended claim 1 no longer contains the expression "in particular an article of the card format". It has been deleted.

Claims 2 and 3 are withdrawn without prejudice.

Re point 2: Non-obviousness of claims 1-4 and 10-19.

Claim 1 relates to a chip that comprises a silicon substrate layer and an additional layer of silicon that is sealed to the active face of the silicon substrate layer by a sealing layer.

McCormick (US 6,369,448) discloses a semiconductor package that comprises flip-chip devices mounted on a packaging substrate. Each flip-chip device is directly electrically connected to the packaging substrate. In McCormick's semiconductor package, there is a so-called lower flip-chip device and an upper flip-chip device. The upper flip-chip device overlies the lower flip-chip device. That is, the flip-chip devices are, as it were, stacked on the packaging substrate. Such a semiconductor package allows increased access speed between chips and reduced total chip package footprint.

McCormick discloses one embodiment, which is illustrated in Fig. 1, wherein the lower flip-chip device 112 is attached to the upper flip-chip device 110 with a thermally conductive adhesive 122 (col.4, lines 38-40). The dimensions and the positions of the flip-chip devices are such that each flip-chip device is directly electrically connected to the packaging substrate 102. The upper flip chip device 110 is connected by means of relatively big solder bumps 114. The lower flip chip device 112 is connected by means of relatively small solder bumps 116.

Applicant respectfully submits that McCormick fails to mention or even suggest that infrared radiation might cause malfunctioning of one or more electrical circuits in the semiconductor package. It is therefore questionable whether a skilled person would be incited to take any measures to protect McCormick's semiconductor package against infrared radiation.

Even in the hypothetical event that a skilled person were to apply Ishikawa's teaching (US 5,394,014) to protect McCormick's semiconductor package, he would not arrive at the subject matter claimed in claim 1 as currently amended. For the sake of argument, it is assumed here that, in McCormick's Fig. 1, embodiment, (a) the lower flip-chip device 112 constitutes silicon substrate layer having an active face with circuits integrated therein defining a central processor unit and memories, that (b) the upper flip-chip device

110 constitutes an additional layer of silicon and that (c) the conductive adhesive 122 constitutes a sealing layer that seals the upper flip-chip to the lower flip-chip, which assumptions are arguable.

In that hypothetical event, the subject matter claimed in claim 1 cannot be arrived at because it is not the active face of the lower flip-chip device 112 that is sealed to the upper flip-chip device 110. According to McCormick's teaching, it is the face opposite to the active face of the lower flip-chip device that must be sealed to the upper flip-chip device. If done otherwise, it is impossible to electrically connect the lower flip-chip device directly to the packaging substrate. In other words, McCormick's semiconductor package does not allow the active face of the lower flip-chip device 112 to be sealed to the upper flip-chip device 110.

Applicant respectfully submits that Ishikawa does not disclose nor suggest sealing a silicon substrate layer having electrical circuits to an additional silicon layer and to use that additional silicon layer as a protection against infrared radiation.

Accordingly, it is respectfully submitted that McCormick does not anticipate independent claim 1 as currently amended in view of Ishikawa. The dependent claims are allowable for at least the same reasons as independent claim 1. Independent claim 20, which relates to a portable article provided with a chip, is allowable for the same reasons as claim 1 because it recites the same features

The application is now deemed to be in condition for allowance and notice to that effect is solicited.

Respectfully submitted,



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